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Approved for use through 10/31/2002. OMB 0651-0032  
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# UTILITY PATENT APPLICATION TRANSMITTAL

(Only for new nonprovisional applications under 37 CFR 1.53(b))

Attorney Docket No. YOR920030368US1 (8728-643)  
First Inventor Hendrik F. Hamann  
Title Multi-Bit Phase Change Memory Cell and Multi-Bit.....  
Express Mail Label No. EV 413369271US

## APPLICATION ELEMENTS

See MPEP chapter 600 concerning utility patent application contents.

ADDRESS TO: Assistant Commissioner for Patents  
Box Patent Application  
Washington, DC 20231

1. ☒ Fee Transmittal Form (e.g., PTO/SB/17)  
(Submit an original and a duplicate for fee processing)
2. ☐ Applicant claims small entity status.  
See 37 CFR 1.27.
3. ☒ Specification [Total Pages 26]  
(preferred arrangement set forth below)
  - Descriptive title of the invention
  - Cross Reference to Related Applications
  - Statement Regarding Fed sponsored R & D
  - Reference to sequence listing, a table, or a computer program listing appendix
  - Background of the Invention
  - Brief Summary of the Invention
  - Brief Description of the Drawings (if filed)
  - Detailed Description
  - Claim(s)
  - Abstract of the Disclosure
4. ☒ Drawing(s) (35 U.S.C. 113) [Total Sheets 12]
5. Oath or Declaration [Total Pages 2]
  - a. ☒ Newly executed (original or copy)
  - b. ☐ Copy from a prior application (37 CFR 1.63 (d))  
(for continuation/divisional with Box 18 completed)
    - i. ☐ **DELETION OF INVENTOR(S)**  
Signed statement attached deleting inventor(s)  
named in the prior application, see 37 CFR 1.63(d)(2) and 1.33(b).
6. ☐ Application Data Sheet. See 37 CFR 1.76

7. ☐ CD-ROM or CD-R in duplicate, large table or Computer Program (Appendix)
8. Nucleotide and/or Amino Acid Sequence Submission (if applicable, all necessary)
  - a. ☐ Computer Readable Form (CRF)
  - b. Specification Sequence Listing on:
    - i. ☐ CD-ROM or CD-R (2 copies); or
    - ii. ☐ paper
  - c. ☐ Statements verifying identity of above copies

## ACCOMPANYING APPLICATION PARTS

9. ☒ Assignment Papers (cover sheet & document(s))
10. ☐ 37 CFR 3.73(b) Statement (when there is an assignee) ☒ Power of Attorney
11. ☐ English Translation Document (if applicable)
12. ☐ Information Disclosure Statement (IDS)/PTO-1449 ☐ Copies of IDS Citations
13. ☐ Preliminary Amendment
14. ☒ Return Receipt Postcard (MPEP 503)  
(Should be specifically itemized)
15. ☐ Certified Copy of Priority Document(s)  
(if foreign priority is claimed)
16. ☐ Nonpublication Request under 35 U.S.C. 122 (b)(2)(B)(i). Applicant must attach form PTO/SB/35 or its equivalent.
17. ☒ Other: Associate Power of Attorney

18. If a CONTINUING APPLICATION, check appropriate box, and supply the requisite information below and in a preliminary amendment, or in an Application Data Sheet under 37 CFR 1.76:

☐ Continuation ☐ Divisional ☐ Continuation-in-part (CIP) of prior application No.: \_\_\_\_\_

Prior application information: Examiner \_\_\_\_\_ Group Art Unit: \_\_\_\_\_

For CONTINUATION OR DIVISIONAL APPS only: The entire disclosure of the prior application, from which an oath or declaration is supplied under Box 5b, is considered a part of the disclosure of the accompanying continuation or divisional application and is hereby incorporated by reference. The incorporation can only be relied upon when a portion has been inadvertently omitted from the submitted application parts.

## 19. CORRESPONDENCE ADDRESS

☐ Customer Number or Bar Code Label (Insert Customer No. or Attach bar code label here) or ☐ Correspondence address below

Name	Frank Chau, Esq.				
Address	F. CHAU & ASSOCIATES, LLP				
	1900 Hempstead Turnpike				
City	East Meadow	State	New York	Zip Code	11554
Country	USA	Telephone	516-357-0091	Fax	516-357-0092

Name (Print/Type)	Benjamin M. Halpern	Registration No. (Attorney/Agent)	46,494
Signature	Bj-m-halpern		Date 11/20/03

Burden Hour Statement: This form is estimated to take 0.2 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Box Patent Application, Washington, DC 20231.

PTO/SB/05 (03-01)  
22390 U.S. PTO  
10/718070  
112003

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**FEE TRANSMITTAL**  
**for FY 2003**

Effective 01/01/2003. Patent fees are subject to annual revision.

☐ Applicant claims small entity status. See 37 CFR 1.27**TOTAL AMOUNT OF PAYMENT** (\$)**986.00****Complete if Known**

Application Number	
Filing Date	November 20, 2003
First Named Inventor	Hendrik F. Hamann
Examiner Name	
Art Unit	
Attorney Docket No.	YOR920030368US1 (8728-643)

**METHOD OF PAYMENT** (check all that apply)☐ Check ☐ Credit card ☐ Money Order ☐ Other ☐ None☒ Deposit Account:

Deposit Account Number

50-0510/IBM

Deposit Account Name

IBM/Yorktown Heights

The Commissioner is authorized to: (check all that apply)

☒ Charge fee(s) indicated below ☒ Credit any overpayments  
☐ Charge any additional fee(s) during the pendency of this application  
☐ Charge fee(s) indicated below, except for the filing fee to the above-identified deposit account.
**FEE CALCULATION****1. BASIC FILING FEE**

Large Entity		Small Entity		Fee Description	Fee Paid
Fee Code	Fee (\$)	Fee Code	Fee (\$)		
1001	750	2001	375	Utility filing fee	770.00
1002	330	2002	165	Design filing fee	
1003	520	2003	260	Plant filing fee	
1004	750	2004	375	Reissue filing fee	
1005	160	2005	80	Provisional filing fee	
<b>SUBTOTAL (1)</b>					<b>(\$)<b>770.00</b></b>

**2. EXTRA CLAIM FEES FOR UTILITY AND REISSUE**

		Extra Claims		Fee from below	Fee Paid
Total Claims	25	-20** =	5	18	=90
Independent Claims	4	-3** =	1	86	=86
Multiple Dependent				290	=0

Large Entity		Small Entity		Fee Description	Fee Paid
Fee Code	Fee (\$)	Fee Code	Fee (\$)		
1202	18	2202	9	Claims in excess of 20	
1201	84	2201	42	Independent claims in excess of 3	
1203	280	2203	140	Multiple dependent claim, if not paid	
1204	84	2204	42	** Reissue independent claims over original patent	
1205	18	2205	9	** Reissue claims in excess of 20 and over original patent	
<b>SUBTOTAL (2)</b>					<b>(\$)<b>176.00</b></b>

\*\*or number previously paid, if greater; For Reissues, see above

**FEE CALCULATION** (continued)**3. ADDITIONAL FEES**

Large Entity		Small Entity		Fee Description	Fee Paid
Fee Code	Fee (\$)	Fee Code	Fee (\$)		
1051	130	2051	65	Surcharge - late filing fee or oath	
1052	50	2052	25	Surcharge - late provisional filing fee or cover sheet	
1053	130	1053	130	Non-English specification	
1812	2,520	1812	2,520	For filing a request for <i>ex parte</i> reexamination	
1804	920*	1804	920*	Requesting publication of SIR prior to Examiner action	
1805	1,840*	1805	1,840*	Requesting publication of SIR after Examiner action	
1251	110	2251	55	Extension for reply within first month	
1252	410	2252	205	Extension for reply within second month	
1253	930	2253	465	Extension for reply within third month	
1254	1,450	2254	725	Extension for reply within fourth month	
1255	1,970	2255	985	Extension for reply within fifth month	
1401	320	2401	160	Notice of Appeal	
1402	320	2402	160	Filing a brief in support of an appeal	
1403	280	2403	140	Request for oral hearing	
1451	1,510	1451	1,510	Petition to institute a public use proceeding	
1452	110	2452	55	Petition to revive - unavoidable	
1453	1,300	2453	650	Petition to revive - unintentional	
1501	1,300	2501	650	Utility issue fee (or reissue)	
1502	470	2502	235	Design issue fee	
1503	630	2503	315	Plant issue fee	
1460	130	1460	130	Petitions to the Commissioner	
1807	50	1807	50	Processing fee under 37 CFR 1.17(q)	
1806	180	1806	180	Submission of Information Disclosure Stmt	
8021	40	8021	40	Recording each patent assignment per property (times number of properties)	40.00
1809	750	2809	375	Filing a submission after final rejection (37 CFR 1.129(a))	
1810	750	2810	375	For each additional invention to be examined (37 CFR 1.129(b))	
1801	750	2801	375	Request for Continued Examination (RCE)	
1802	900	1802	900	Request for expedited examination of a design application	

Other fee (specify)

\*Reduced by Basic Filing Fee Paid

**SUBTOTAL (3)** (\$)**40.00****SUBMITTED BY**

Name (Print/Type)

Benjamin M. Halpern

Registration No.  
(Attorney/Agent)

46,494

(Complete if applicable)

Telephone 516-357-0091

Signature

B. M. Halpern

Date

11/20/03

**WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.**

This collection of information is required by 37 CFR 1.17 and 1.27. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, Washington, DC 20231.

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PO Box 1450  
Alexandria VA 22313-1450

ATTORNEY DOCKET NO. YOR920030368US1 (8728-643)  
Date: November 20, 2003  
Express Mail Label: EV 4133692371US1  
Date of Deposit: November 20, 2003

Sir

Transmitted herewith for filing is the Patent Application of:

Inventors: Hendrik F. Hamann, Chung Hon Lam, Michelle Leigh Steen, Hon-Sun Philip Wong

For: **MULTI-BIT PHASE CHANGE MEMORY CELL AND MULTI-BIT PHASE CHANGE MEMORY  
INCLUDING THE SAME, METHOD OF FORMING A MULTI-BIT PHASE CHANGE MEMORY, AND  
METHOD OF PROGRAMMING A MULTI-BIT PHASE CHANGE MEMORY**

Enclosed are: [X] 18 sheets of specification; [X] 1 sheet(s) of Abstract; [X] 7 sheet(s) of claims; [X] 12 sheet(s) of drawing(s);

[X] An assignment of the invention to: International Business Machines Corporation, Armonk, New York,  
with Recordation Form.

[X] Declaration and Power of Attorney.

[ ] A certified copy of a \_\_\_\_\_ Application No. dated \_\_\_\_\_ from which priority under Title 35 USC §119 is claimed.

[X] Associate Power of Attorney.

The filing fee has been calculated as shown below:

(Col. 1)		(Col. 2)	OTHER THAN A SMALL ENTITY	
FOR:	NO. FILED	NO. EXTRA	RATE	FEE
BASIC FEE				\$ 770.00
TOTAL CLAIMS	25 -20 =	5	X \$18 =	\$ 90.00
INDEP CLAIMS	4 -3 =	1	X \$86 =	\$ 86.00
MULTIPLE DEPENDENT CLAIMS PRESENTED			+ 290 =	
			TOTAL	\$ 946.00

If the difference in Col. 1 is less than zero, enter "0"  
in Col. 2.

[ ] Checks in the amount of \$\_\_\_\_\_ and \$\_\_\_\_\_ to cover the filing fee(s) and recording fee are enclosed.

[X] Please charge my Deposit Account No. 50-0510/IBM (Yorktown Heights) in the amount of \$946.00.

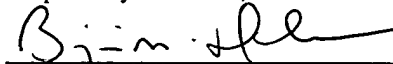
[X] The Commissioner is hereby authorized to charge payment of the following fees  
associated with this communication or credit any overpayment to  
Deposit Account No. 50-0510/IBM (Yorktown Heights). A duplicate copy of this sheet is enclosed.

[X] Any additional filing fees required under 37 CFR 1.16.

[X] Any patent application processing fees under 35 CFR 1.17.

Respectfully submitted,

By:



Benjamin M. Halpern  
Registration No. 46,494

Attorney for:  
IBM Corporation  
Intellectual Property Law Dept.  
P.O. Box 218  
Yorktown Heights, NY 10598

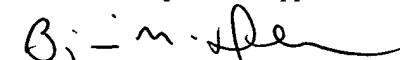
Please address all

correspondence to:

F. CHAU & ASSOCIATES, LLP  
1900 Hempstead Turnpike, Suite 501  
East Meadow, NY 11554  
Tel: (516) 357-0091  
Fax: (516) 357-0092

**CERTIFICATION UNDER 37 C.F.R. § 1.10**

I hereby certify that this Application transmittal and the documents referred to as enclosed are being deposited with the  
United States Postal Service on this date November 20, 2003 in an envelope as "Express Mail Post Office to Addressee" Mailing  
Label Number EV413369271US addressed to: Commissioner for Patents, Mail Stop Patent Application, PO Box 1450,  
Alexandria, VA 22313-1450.

  
Benjamin M. Halpern